EXHIBIT E

OFFICE ACTION IN INTER PARTES *REEXAMINATION*	Control No. 95/000,324	Patent Under Reexamination 6,857,001
	Examiner James Menefee	Art Unit 3992

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address.* --

Responsive to the communication(s) filed by:
Patent Owner on _____
Third Party(ies) on _____

RESPONSE TIMES ARE SET TO EXPIRE AS FOLLOWS:

For Patent Owner's Response:
        2 MONTH(S) from the mailing date of this action. 37 CFR 1.945. EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.956.
For Third Party Requester's Comments on the Patent Owner Response:
        30 DAYS from the date of service of any patent owner's response. 37 CFR 1.947. NO EXTENSIONS OF TIME ARE PERMITTED. 35 U.S.C. 314(b)(2).

All correspondence relating to this inter partes reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

This action is not an Action Closing Prosecution under 37 CFR 1.949, nor is it a Right of Appeal Notice under 37 CFR 1.953.

PART I. THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892
2. ☐ Information Disclosure Citation, PTO/SB/08
3. ☐ _____

PART II. SUMMARY OF ACTION:

1a. ☒ Claims 1-63 are subject to reexamination.
1b. ☐ Claims _____ are not subject to reexamination.
2. ☐ Claims _____ have been canceled.
3. ☐ Claims _____ are confirmed. [Unamended patent claims]
4. ☐ Claims _____ are patentable. [Amended or new claims]
5. ☒ Claims 1-63 are rejected.
6. ☐ Claims _____ are objected to.
7. ☐ The drawings filed on _____   ☐ are acceptable   ☐ are not acceptable.
8. ☐ The drawing correction request filed on _____ is: ☐ approved. ☐ disapproved.
9. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119 (a)-(d). The certified copy has:
        ☐ been received.   ☐ not been received.   ☐ been filed in Application/Control No 95000324.
10. ☐ Other _____

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INTER PARTES REEXAMINATION OFFICE ACTION

This is an *inter partes* reexamination of U.S. Patent No. 6,857,001 (herein "the '001 patent"). In the attached Order Granting Reexamination, the examiner found a substantial new question of patentability was raised as to claims 1-63 of the '001 patent. The examiner found a SNQ was raised by all of the proposals in the Request except for the proposed rejections based on Allen (Issue 10 as in the Order).

References Cited in Request

- Ylonen et al., Concurrent Shadow Paging: Snapshots, Read-Only Transactions, and On-The-Fly Multi-Level Incremental Dumping, TKO-B104, Laboratory of Information Processing Science Helsinki Univ. of Tech., 1993 ("Ylonen").

- Hitz et al., File System Design for an NFS File Server Appliance, TR 3002, USENIX, Jan. 19, 1994 ("Hitz").

- Veritas File System 3.4 Administrator's Guide, Nov. 2000 ("VxFS").

- Siddha et al., A Persistent Snapshot Device Driver for Linux, Proc. of the 5th Annual Linux Showcase & Conference, USENIX, Nov. 2001 ("Siddha").

- Sun StorEdge Instant Image 2.0 System Administrator's Guide, Feb. 2000 ("Sun").

- Suresh Babu S, Persistent Snapshots, Indian Inst. of Science, Bangalore, Jan. 2000 ("Siddha Report").

- Czezatke et al., LinLogFS: A Log-Structured Filesystem for Linux, Proc. of FREENIX Track: 2000 USENIX Annual Technical Conference, Jun. 2000, USENIX ("Czezatke").

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- The Enterprise Challenge Served by Snapshot, LSI Logic Whitepaper, 2001 ("LSI

   Logic").

- Osorio et al., Guidelines for Using Snapshot Storage Systems for Oracle Databases, Oct.

   2001 ("Osorio").

- U.S. Patent No. 6,341,341 to Grummon et al. ("Grummon").

- U.S. Patent No. 5,675,802 to Allen et al. ("Allen").

- U.S. Patent No. 6,795,966 to Lim et al. ("Lim").

See the Order for discussion of the dates of Ylonen and Osorio.

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Extensions of Time

Extensions of time under 37 CFR 1.136(a) will not be permitted in *inter partes*

reexamination proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant"

and not to the patent owner in a reexamination proceeding. Additionally, 35 U.S.C. 314(c)

requires that *inter partes* reexamination proceedings "will be conducted with special dispatch"

(37 CFR 1.937). Patent owner extensions of time in *inter partes* reexamination proceedings are

provided for in 37 CFR 1.956. Extensions of time are not available for third party requester

comments, because a comment period of 30 days from service of patent owner's response is set

by statute. 35 U.S.C. 314(b)(3).

Notification of Other Proceedings

The patent owner is reminded of the continuing responsibility under 37 CFR 1.985(a), to

apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving the

'001 patent throughout the course of this reexamination proceeding. The third party requester is

also reminded of the ability to similarly apprise the Office of any such activity or proceeding

throughout the course of this reexamination proceeding. See MPEP § 2686 and 2686.04.

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Lexicography

It is well settled that an applicant may be his own lexicographer, and that when an

applicant defines a term in the specification that definition will control claim construction. See

MPEP 2111.01 IV. Patent owner did precisely this in the '001 patent, including a section called

"Lexicography" and listing definitions for a number of terms. See col. 3 line 53 – col. 4 line 43.

Patent owner further stated "[T]hese descriptions of general meanings of these terms are not

intended to be limiting, only illustrative. Other and further applications of the invention,

including extensions of these terms and concepts, would be clear to those of ordinary skill in the

art after perusing this application. These other and further applications are part of the scope and

spirit of the invention . . . ." Col. 4 lines 35-41. Thus, it is apparent that while patent owner may

not have intended his definitions to limit the invention, he intended such terms to include at least

his listed definitions (along with perhaps "extensions of these terms and concepts"). In other

words, patent owner intended with his "illustrative" definitions that these terms be construed at

least as broadly as in the listed definitions, that such terms would encompass his listed definition

in addition to any extensions deemed appropriate by a person of ordinary skill in the art.

The examiner therefore construes the claims with the above observations in mind: the

defined terms are deemed to encompass at least the definition used in the Lexicography section.

By explicitly setting forth a lexicography section in the specification, and by explicitly stating

that the definitions in this section are not limiting but instead are illustrative and the terms could

encompass even more than the provided definition, patent owner has put a person of ordinary

skill in the art on notice as to the intended breadth of such terms when used in the claims. This

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lexicography section further provides the reasonable clarity, deliberateness, and precision to

show patent owner has intended to be his own lexicographer in describing these terms.

Statutory Basis - 35 USC § 102 & 103

The anticipation and obviousness discussions herein are based on the following statutory

sections.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the anticipation rejections made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness discussions set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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Requester's Proposed Rejections

Issue 1:[1]

Claims 1-63 are rejected under 35 U.S.C. 102(b) as being anticipated by Ylonen.

It is noted the claims require "active file systems," see, e.g., claim 1; Ylonen does not explicitly use this term, referring instead to databases, but Ylonen does teach active file systems. Both the base database and snapshot database of Ylonen are sets of data that can be accessed and modified. See section 3.4 (noting snapshot is modifiable). These databases can therefore be deemed active file systems as the term is defined in the '001 patent, see col. 4 lines 27-28.

In light of this, the use of Hitz as described in the proposed rejection is unnecessary. The Request cited Hitz as follows: "Author David Hitz, also one of the named inventors of the '001 Patent, admits in section 3.5 (page 12) that copy-on-write snapshot techniques implemented in the WAFL file system, the preferred embodiment of the '001 Patent, are well known for databases. Thus, as a matter of claim construction, one of ordinary skill in the art would understand that "file system," as claimed in the '001 patent, includes "databases," and the claim is anticipated by Ylonen with the admission of the named inventor." E.g., Request p. 9.

First, it is not clear to the examiner that a reference published nine years prior to the filing of the patent, where only one of the three authors is common with one of the three named inventors of the patent, is sufficient to be deemed "an admission" by the patent owner. MPEP 2617 III. does give some credence to the proposition that admissions may be found in "printed publications or some other source," but the examiner does not find a need to decide whether

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[1] The Issues are as listed in the Request pp. 2-3 and as discussed in the Order Granting the Request.

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Hitz's statement is properly an admission because the statement is not saying what the Request

alleges.

The Request alleges that the statements by Hitz show that a database is a file system. The

examiner disagrees that Hitz says this; the relevant statement at page 12 of Hitz is: "Although

this [shadow paging] technique is unusual for a UNIX file system, it is well known for

databases." All this is saying is that a technique known as used with databases is now being used

with a file system in Hitz; there is nothing to indicate that a database actually *is* a file system.[2]

The examiner therefore does not rely on Hitz to provide the Requester's proposed claim

construction that a database is a file system. In any event, as described in the Lexicography

section, *supra*, patent owner has given the term "file system" a broad, non-limiting, illustrative

definition, and Ylonen's databases are encompassed by this definition. Any reliance of the so-

called admission in Hitz is therefore deemed unnecessary.

The rejections of these claims were proposed by the Requester and <u>are adopted</u> for

substantially the reasons set forth in the Request (in light of the observations noted above, i.e.

they are adopted to the extent they rely on Ylonen). See Request pp. 8-58, which are hereby

incorporated by reference, except that the references to Hitz are not relied upon.

The proposed rejection of claims 1-63 under 35 U.S.C. 103(a) as being unpatentable over

Ylonen in view of Hitz is <u>not adopted</u>. The Request in the claim chart, *see, e.g.,* p. 9, states that

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[2] Note the examiner's finding that *Hitz* does not require a database to be a file system does not defeat the examiner's finding herein that the *specification* of the '001 patent allows for this; this is so even as Hitz appears to refer to file systems and databases as different things. As described in MPEP 2111.01 IV., when applicant defines a term with reasonable clarity so that persons of ordinary skill in the art are on notice of the intended definition—as was done here—applicant's definition controls even to the extent it might not be totally consistent with the prior art.

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even if Ylonen is not found to anticipate the claims, then alternatively Ylonen and Hitz render

the claims obvious.

This rejection is not adopted because the Request provides no rationale whatsoever for

combining the references. The Request merely states: "Alternatively, one of ordinary skill in the

art would readily appreciate that the database snapshots taught in Ylonen can be implemented in

file system snapshots taught in Hitz." See, e.g., Request p. 9. This same sentence is copied

throughout, and is the only discussion in the Request as to how the combination of Ylonen and

Hitz renders the claims obvious. The Federal Circuit has stated that "rejections on obviousness

cannot be sustained with mere conclusory statements; instead, there must be some articulated

reasoning with some rational underpinning to support the legal conclusion of obviousness." In re

Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006) (quoted with approval in

KSR International Co. v. Teleflex Inc., 550 U.S. ___, 82 USPQ2d 1385, 1396 (2007)). As the

Request has provided nothing more than a conclusion that the references support an obviousness

determination the proposed rejection cannot stand. Further, the examiner does not provide his

own obviousness rejection. The only part of Hitz that potentially supports their combination is a

single sentence on p. 12: "Although this [shadow paging] technique is unusual for a UNIX file

system, it is well known for databases." It is not apparent to the examiner how this single

sentence supports an obviousness determination. In any event, an obviousness rejection is

deemed unnecessary given the definition of file system described in the '001 patent and the

anticipation rejection provided above.

Issue 2:

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Claims 1-63 are rejected under 35 U.S.C. 102(b) as being anticipated by VxFS.

It is noted that many of the claims of the '001 patent refer to "snapshots." See, e.g.,

claim 10. A Storage Checkpoint of VxFS is deemed to be a snapshot in the same sense as in the

'001 patent, as it is a complete point in time image of the file system. See p. 86 (Data Storage

Checkpoints). It is a valid system image of the file system, i.e. it is self-consistent and therefore

at a consistency point, and is a written record of the data in the file system. The Storage

Checkpoint is therefore consistent with the definition of snapshot as provided in the '001 patent.

See '001 patent col. 4 lines 10-26. While VxFS contrasts Storage Checkpoints with snapshots,

see p. 82, the examiner understands a Storage Checkpoint to be not a totally different entity than

a snapshot, but instead is in actuality an improved type of snapshot, as it falls under the snapshot

definition in the '001 patent and as it improves on conventional snapshots in a similar way as the

snapshots of the '001 patent (e.g. by making them writable).

The rejections of these claims were proposed by the Requester and are adopted for the

reasons set forth in the Request (in light of the observations noted above). See Request pp. 58-

75, which are hereby incorporated by reference.

Issue 3:

Claims 1-63 are rejected under 35 U.S.C. 102(a) as being anticipated by Siddha.

The rejections of these claims were proposed by the Requester and are adopted for the

reasons set forth in the Request. See Request pp. 76-99, which are hereby incorporated by

reference.

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    Issue 4:

    Claims 1-4, 10-15, 20-23, 29-34, 39-42, 48-53, and 58-59 are rejected under 35

U.S.C. 102(b) as being anticipated by Sun.

    It is noted the claims require "active file systems," see, e.g., claim 1, and some claims

require "snapshots," see, e.g., claim 10; Sun does not explicitly use these terms, but Sun does

teach these elements. Both the master and shadow volumes of Sun are sets of data that can be

accessed and modified. See p. 1-2 ("[Y]ou can read from and write to this shadow volume–and

also the master volume."). These volumes can therefore be deemed active file systems as the

term is defined in the '001 patent, see col. 4 lines 27-28. Sun also discloses that a dependent

shadow volume is a point in time image of the master that is created by a copy-on-write

technique (again, not explicitly named but this is the technique described). See pp. 1-5 to 1-6.

This is essentially how a snapshot is described in the '001 patent. Furthermore, the shadow

volume is a valid system image of the master, i.e. it is self-consistent and therefore at a

consistency point, and is a written record of the data in the master. The shadow volume is

therefore consistent with the definition of snapshot as provided in the '001 patent. See '001

patent col. 4 lines 10-26.

    The rejections of these claims were proposed by the Requester and <u>are adopted</u> for the

reasons set forth in the Request (in light of the observations noted above). See Request pp. 99-

112, which are hereby incorporated by reference (for the rejected claims only).

    The proposed rejections of claims 5-9, 16-19, 24-28, 35-38, 43-47, and 54-57 as being

anticipated by Sun <u>are not adopted</u>.

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Regarding claims 5, 24, and 43, the claims require "wherein snapshots are made of ones

of the plural active file systems, each snapshot forming an image of its respective active file

system at a past consistency point." The Request alleges that Sun meets this limitation because

"Once the shadow volume is mounted, it can be treated as a master and have its own point-in-

time shadow volumes, equivalent to a snapshot." See e.g., Request pp. 100-101. The Request

does not cite to any portion of Sun for this proposition, and the examiner disagrees that Sun

teaches this feature.

First, it must be noted that the claims require snapshots are made of ones of the plural

active file systems; in Sun, the active file systems are met by the master and shadow volumes as

described in the rejection of claim 1, therefore there must be a snapshot made of one of the

master and shadow volumes to meet these limitations. Furthermore, this snapshot must be in

addition to the shadow volume; as noted above, the dependent shadow volume is considered a

snapshot in rejecting claim 10. For the purposes of claims 5, 24, and 43, however, the shadow

volume cannot be considered the claimed snapshot; this is because in these claims, the shadow

volume is already used to meet the limitation of the parent claims (e.g. claim 1) as one of the

plural active file systems. The shadow volume cannot be both the active file system of claim 1

and then also the snapshot of claim 5. Thus, to meet the limitations of claims 5, 24, and 43, there

must be an additional snapshot made of one of the master and shadow volumes.

As mentioned above, the Request alleges that the limitation is indeed met because the

shadow volume can be treated as a master and can have its own shadow volumes, which can then

be considered snapshots. As mentioned, however, the Request does not cite to any section of

Sun that actually discloses this, and the examiner has not found this teaching in Sun. There is no

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suggestion in Sun that a shadow volume can have its own shadows, or even that a master volume

can have multiple shadows. The only indication is that the master and shadow occur in pairs in a

volume set—that a master may have just one shadow, and that a shadow is associated with a

master but does not have its own shadows. As the Request has not pointed to a section of Sun

that teaches this feature, and has provided no rationale why it may be inherent, the examiner

declines to make the proposed anticipation rejection of these claims.

Regarding claims 6-9, 25-28, and 44-47, the claims depend from one of claims 5, 24, and

43, and therefore the proposed rejections are not adopted for the same reasons.

Regarding claims 16, 18, 35, 37, 54, and 56, the claims require making a new snapshot of

either the first or second active file system. Sun fails to meet this limitation for similar reasons

as described above with regard to claims 5, 24, and 43. To reject the parent claims, for example

claim 10, the master volume of Sun is the "first" active file system and the shadow volume is the

"second" active file system. Thus, to meet claims 16, 18, 35, 37, 54, and 56, Sun would require

an additional snapshot of either of the master or shadow volumes. Sun, however, lacks this

feature. As described above as to claims 5, 24, and 43, Sun does not disclose that the master can

have additional shadows or that a shadow can have a shadow. Thus, there is no "new snapshot"

as required by these claims, and the examiner therefore does not make the proposed anticipation

rejection of these claims.

Regarding claims 17, 19, 36, 38, 55, and 57, the claims depend from one of the above

claims, and therefore the proposed rejections are not adopted for the same reasons.

Issue 5:

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Claims 1-63 are rejected under 35 U.S.C. 102(b) as being anticipated by Siddha Report.

The rejections of these claims were proposed by the Requester and are adopted for the reasons set forth in the Request. See Request pp. 112-140, which are hereby incorporated by reference.

Issue 6:

Claims 1-6, 10-12, 14-15, 20-25, 29-31, 33, 39-44, 48-50, and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Czezatke.

The rejections of these claims were proposed by the Requester and are adopted for the reasons set forth in the Request. See Request pp. 140-153, which are hereby incorporated by reference (for the rejected claims only).

Claims 34 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Czezatke. The Request did not propose to reject these claims. The body of these claims is the same as claim 15, which was rejected as noted above, except these claims are dependent from different parent claims. Each of the parent claims is rejected as noted above, and claim 15 is rejected, therefore claims 34 and 53 are rejected for the same reasons, which are also incorporated by reference from the Request.

The proposed rejections of claims 32 and 51 as being anticipated by Czezatke are not adopted.

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These claims require the severing of any snapshot pointers from the first active file

system to the second active file system. The Request alleges this is met in Czezatke as follows:

"The Czezatke file system discloses making snapshots (clones) of writable snapshots, each of

which is an active file system. *See* Sec. 4 (discussing implementing writable, clonable, clones)."

See, e.g., Request p. 149. This clearly is not an explicit disclosure that snapshot pointers are

severed, and the Request has not explained how this feature is inherent, nor does the examiner

clearly see how this feature is necessarily present in Czezatke. The examiner thus declines to

find that this constitutes an anticipation of the claims by Czezatke.

Issue 7:

Claims 1-5, 10-12, 20-24, 29-31, 39-43, and 48-50 are rejected under 35 U.S.C. 102(a) as

being anticipated by LSI Logic.

The rejections of these claims were proposed by the Requester and are adopted for the

reasons set forth in the Request. See Request pp. 154-168, which are hereby incorporated by

reference.

Issue 8:

Claims 1-5, 10-12, 20-24, 29-31, 39-43, and 48-50 are rejected under 35 U.S.C. 102(a) as

being anticipated by Osorio.

It is noted the claims require "active file systems," see, e.g., claim 1; Osorio does not

explicitly use this term, referring instead to databases, but Osorio does teach active file systems.

Both the base database and snapshot database of Osorio are sets of data that can be accessed and

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modified. See p. 4 (noting snapshot area can be written to). These databases can therefore be

deemed active file systems as the term is defined in the '001 patent, see col. 4 lines 27-28.

The rejections of these claims were proposed by the Requester and <u>are adopted</u> for the

reasons set forth in the Request (in light of the observations noted above). See Request pp. 168-

174, which are hereby incorporated by reference.

Issue 9:

Claims 1, 10, 20, 29, 39, and 48 are rejected under 35 U.S.C. 102(e) as being anticipated

by Grummon.

The rejections of these claims were proposed by the Requester and <u>are adopted</u> for the

reasons set forth in the Request. See Request pp. 174-176, which are hereby incorporated by

reference.

Issue 10:

The examiner found that no SNQ was raised by Allen. See the attached Order Granting

Reexamination.

Issue 11:

Claims 1, 10, 20, 29, 39, and 48 are rejected under 35 U.S.C. 102(e) as being anticipated

by Lim.

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The rejections of these claims were proposed by the Requester and <u>are adopted</u>

substantially as set forth in the Request. The examiner, however, provides further explanation of

Lim.

Lim describes a computer system state checkpoint mechanism. See Title. The system

periodically takes checkpoints, i.e. snapshots, of the system state so that the system can later be

restored to that state. See abstract. Note that Lim describes the terms checkpoints and snapshots

as interchangeable. Col. 2 lines 40-41; col. 3 lines 31-32. Also note that checkpoints are stored

as state vectors that are accessible, and when loaded as described below they may be modified;

thus, they are a collection of data that may be accessed and modified. They therefore may be

considered active file systems, see '001 patent col. 4 lines 27-28.

When a checkpoint is originally taken, it is saved as the entire state vector of the system.

Col. 23 lines 52-55. When later checkpoints are taken, the entire state is not saved; instead,

copy-on-write is utilized, where only a vector of changes is saved. *Id.* That is, the new

checkpoint includes only data that has been changed, as well as pointers back to the original data

in the original checkpoint that was not changed. Col. 23 line 63 – col. 4 line 5. Thus, any later

checkpoint initially shares any unchanged data with the earlier checkpoint since the new

checkpoint points to the same data.

Lim also describes that the various different checkpoints can be loaded into different

virtual machines, allowing for multiple processing paths. Col. 20 lines 10-22. Or, a checkpoint

can be loaded into more than one virtual machine, serving as the basis for different transactions

which can lead to the checkpoint having multiple checkpoint successors in a tree. Col. 21 lines

1-5. If the same checkpoint is loaded into two different machines, the two checkpoints will of

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course be identical initially; they will share data in that they will have the same pointers back to the original unmodified data, as described in the preceding paragraph. Further, if an original checkpoint is loaded into one machine, and its successor is loaded in a second machine, the two will also initially share data because the successor was created using the copy-on-write technique as described above. Thus, when multiple checkpoints are loaded into multiple machines as described in cols. 20-21 of Lim, these checkpoints may initially share data.

This feature of loading the checkpoints into different virtual machines, however, allows the users of these machines to perform different operations on the checkpoints, causing the processing paths to diverge. Col. 20 lines 31-38. This loading of the checkpoints also constitutes making the checkpoint writable, as the user may change parameters, *see id.* Thus, changes made to a checkpoint at one virtual machine are not reflected in the checkpoints at another virtual machine.

Given these explanations of Lim, the application to the claims will now be discussed.

Claim 1: A method of operating data storage, the method including maintenance of plural active file systems, wherein each of the active file systems initially access data shared with another of the active file systems, and wherein changes made to each of the active file systems are not reflected in the active file system with which the changed active file system shares the data.

Lim's checkpoints are a collection of data and when loaded into the machine they may be modified. They are therefore active file systems within the definition of the '001 patent. Checkpoints created via copy-on-write initially share data with their parent checkpoint, and also

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when the same checkpoint is loaded into different machines those identical checkpoints will

necessarily initially share data, for example they will both include pointers to the same

unmodified data. When these separately loaded checkpoints are acted upon by different users

using different processing steps their processing paths will diverge, and changes to one will not

be reflected in the other.

        Claim 10: A method of creating plural active file systems, comprising the steps of:

making a snapshot of a first active file system, the snapshot initially sharing data with the first

active file system; and converting the snapshot to a second active file system by making the

snapshot writable, with changes made to the first active file system not reflected in the second

active file system, and with changes made to the second active file system not reflected in the

first active file system.

        Lim's checkpoints are a collection of data and when loaded into the machine they may be

modified. They are therefore active file systems within the definition of the '001 patent. When a

checkpoint is made of a checkpoint, it is created using copy-on-write techniques so that only

modifications are stored, with pointers pointing to any unmodified data. Such checkpoints will

therefore initially share data. Lim describes checkpointing and snapshotting to be

interchangeable terms, therefore this taking of a checkpoint is a taking of a snapshot. When a

checkpoint and its snapshot are loaded into a virtual machine they are made writable and may be

acted upon by different users using different processing steps so their processing paths will

diverge; changes to one will not be reflected in the other.

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Claims 20 and 29: These claims are the same as claims 1 and 10, respectively, except are

drawn to a memory storing information including instructions, the instructions executable by a

processor to perform the methods of claims 1 and 10. These claims are therefore rejected for the

same reasons as those claims. Lim, being a computer system, necessarily includes a memory

that stores instructions executable by a processor to perform the described methods. See also

Lim col. 29 lines 26-59 (describing that the invention can be implemented in typical computer

system components having a memory and processor).

Claims 39 and 48: These claims are the same as claims 1 and 10, respectively, except are

drawn to a storage system, comprising: at least one storage device; an interface to at least one

computing device or network for receiving and sending information; and a controller that

controls storage and retrieval of the information in the storage device, the controller operating

under program control to perform the methods of claims 1 and 10. These claims are therefore

rejected for the same reasons as those claims. Lim's computer system necessarily includes the

claimed elements, as the checkpoints are stored in a storage device, there is necessarily an

interface to the computing device for transmission of information, and necessarily some

controller that controls the storage of the checkpoints and controls the performance of the

methods, for example the virtual machine monitor that is discussed throughout Lim.

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NOTICE RE PATENT OWNER'S CORRESPONDENCE ADDRESS

Effective May 16, 2007, 37 CFR 1.33(c) has been revised to
provide that:

The patent owner's correspondence address for all communications
in an *ex parte* reexamination or an *inter partes* reexamination is
designated as the correspondence address of the patent.

> *Revisions and Technical Corrections Affecting*
> *Requirements for Ex Parte and Inter Partes*
> *Reexamination, 72 FR 18892 (April 16, 2007)(Final*
> *Rule)*

The correspondence address for any pending reexamination
proceeding not having the same correspondence address as that of
the patent is, by way of this revision to 37 CFR 1.33(c),
automatically changed to that of the patent file as of the
effective date.

This change is effective for any reexamination proceeding which
is pending before the Office as of May 16, 2007, including the
present reexamination proceeding, and to any reexamination
proceeding which is filed after that date.

Parties are to take this change into account when filing papers,
and direct communications accordingly.

In the event the patent owner's correspondence address listed in
the papers (record) for the present proceeding is different from
the correspondence address of the patent, it is strongly
encouraged that the patent owner affirmatively file a
Notification of Change of Correspondence Address in the
reexamination proceeding and/or the patent (depending on which
address patent owner desires), to conform the address of the
proceeding with that of the patent and to clarify the record as
to which address should be used for correspondence.

Telephone Numbers for reexamination inquiries:

Reexamination and Amendment Practice   (571) 272-7703
Central Reexam Unit (CRU)   (571) 272-7705
Reexamination Facsimile Transmission No.   (571) 273-9900
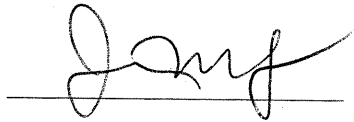
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Any inquiry concerning this communication or earlier communications from the

Reexamination Legal Advisor or Examiner, or as to the status of this proceeding, should be

directed to the Central Reexamination Unit at telephone number (571) 272-7705.

Signed:

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April 2, 2008

Conferees: